

This is essentially a book to be used, its beauty is incidental. Armed with this and the *Illustrated Manual of Pacific Coast Trees* by McMinn and Maino the botanist in the state or the interested visitor is fully prepared to learn the names, characters and distribution of all the woody plants of the state.

Wild Flowers for Nature Lovers*

G. T. HASTINGS

In the introduction the author tells of discovering in the sand dunes of Michigan an area of varied habitats where quantities of wild flowers blossom all summer. Here he has built a bungalow where he lives for seven months of the year. Here he has studied the flowers, their structure, adaptations for pollination and seed dispersal and methods of propagation. Much of what he has learned has gone into this book. While he describes the common and more attractive wild flowers found in the northern and eastern states, his love for the Michigan dunes shows in the starring of the names of all plants found there. As one looks through the volume and notes the great number of stars he does not wonder at Mr. Quick's enthusiastically naming the region an Eldorado of wild flowers.

The arrangement of the book is unusual. Beginning with the first week of April and continuing through to the fourth week of October the reader is taken into the woods or fields and the flowers to be found in blossom are described. At the end of each week's list several pages of dainty line drawings illustrate the plants described. In addition, eight colored plates add beauty to the book. Meant for those just beginning the study of plants, grasses, sedges and many of the small flowers that do not attract attention are omitted. For each plant given there is a brief non-technical description, the range and habitat, and notes on special features, pollination and methods of propagation. At the end of the book there is a short chapter on naturalizing wild flowers and a key based on color, the plants arranged in the order in which they come into bloom under each color.

* *Wild Flowers of the Northern States and Canada*, Arthur Craig Quick. 518 pages, 8 colored plates, 234 line drawings. M. A. Donohue and Co. 1939. \$4.00.

In some cases the plants are not taken up in the order of flowering—thus the five species of sumac described are given in the chapter for the third week of August and in the same chapter among the ten milkweeds is the Four-leaved Milkweed, the blossoming time being noted as May-June. The Meadow Sweet (*Spiraea salicifolia*) is given in the second week of September. The common St. John's-wort in the third week and the Prickly Pear (*Opuntia Rafinesquii*) the last week in October.

The book is attractive and will bring pleasure to many flower lovers and should stimulate them not only in learning the names of flowers but also in learning what insects visit them and how they receive their visitors. Others, interested in making wild flower gardens, may find the notes on propagation of chief interest.

Root Nodule Bacteria*

G. T. H.

In 1932 Fred, Baldwin and McCoy published an extensive work on Root Nodule Bacteria and Leguminous Plants. Included was a bibliography as complete as the authors could make it. Now the authors have brought the bibliography up to date with a supplement listing nearly 50 titles inadvertently omitted in the original publication and about 500 articles published since 1932. In addition there are indices to the plants and authors mentioned in the original volume. Those who have the earlier publication will want this supplement, which will also be valuable to all those interested in the problems of nitrogen fixation and root nodule bacteria.

* Supplement to Root Nodule Bacteria and Leguminous Plants. Edwin Broun Fred, Ira Lawrence Baldwin and Elizabeth McCoy. 40 pages. University of Wisconsin Press. 1939. \$.50.
